

# Improving Water Productivity in Jordan



*Palm trees irrigated with reclaimed water, Aqaba, Jordan*



*Laying locally manufactured drip lines for community-based irrigation system using reclaimed water, Wadi Musa, Jordan.*



*The Kefa'a program is working to increase water productivity in agriculture.*

Integrated water resources management is a major focus of USAID's assistance to Jordan and supports the effective use of reclaimed water, the promotion of irrigation efficiency, the reduction of unaccounted-for municipal water, and improved cost recovery.

## Improving Water Productivity in Jordan

Jordan is one of the ten most water-deprived countries in the world. Available per capita freshwater lags far behind that available in most other countries. Daily per capita water consumption is also quite low, and the cost of supplying water continues to rise. This extreme water scarcity and increasing cost of supply is a serious constraint to Jordan's economic growth.

The current national water deficit is predicted to increase from 297 to 408 million cubic meters (MCM) per year. This dire forecast is based on expectations of sharply rising demand for municipal and industrial water from 466 to 758 MCM in 15 years and an increase from 791 to 900 MCM in the demand for irrigation water over the next five-year period. This deficit will occur in spite of the ambitious and impressive construction program of conventional water collection, distribution and wastewater treatment facilities which is currently planned.

Presently, two-thirds of Jordan's water is directed to agricultural crops with relatively low prices for irrigation water providing limited incentive to improve productivity. The social and economic cost to the nation is very high and the return on investment rather low. Meeting the needs of urban consumers, industry and tourism continues to present a challenge.

Over the past two decades the Ministry of Water and Irrigation (MWI), with USAID support, has realized important gains in addressing the challenge of satisfying the rapidly growing demands of communities, industries and farmers, all in the face of a very limited natural supply. As the leading donor in the water sector, USAID has provided a mix of construction activities, technical assistance and institutional strengthening. USAID has also been pioneering water demand management and reuse of reclaimed water for agriculture and industry.

### The USAID Water Team

[www.usaid.gov/our\\_work/  
environment/water/index.html](http://www.usaid.gov/our_work/environment/water/index.html)  
[www.sdp.gov](http://www.sdp.gov)



### Agricultural Water Productivity

Jordanian agriculture is challenged by low productivity, limited and/or unreliable water supplies, and increased demand from rural populations and urban water users. The Ministry of Water and Irrigation and USAID recently initiated the “Education and Information Program to Improve Irrigation Water Use Efficiency” or Kefa’a, a five year program designed to create a more profitable but less water intensive agricultural sector.

Over the five year period, the program will encourage new attitudes and behavioral patterns among the Jordan Valley and Amman-Zarqa Basin farmers, engage community-based groups in action programs, establish a sustainable producer-level extension and agriculture service, and prepare information campaigns for decision-makers and the general public. Key objectives include: increased value per cubic meter of water through improved crop selection and water technologies at the farm level; improved capacity of farmers and associations to effectively market regionally and internationally; and development of effective extension capabilities.



*Regional and international marketing capacity are improving under the Kefa'a program.*

### Reclaimed Water Use and Recycling

The reuse of wastewater has been practiced for centuries in many of the world's rivers, including the Jordan. However, due to concerns over public health, the environment and agricultural export markets, the unplanned use of treated wastewater has been actively discouraged.

A growing population, industrialization and tourism are all increasing demand for freshwater resources. At the same time, a major effort to rehabilitate and construct wastewater treatment facilities, funded in part by USAID, is resulting in increased supplies of high quality effluent, which is a viable source for meeting non-potable water demands.

USAID is working with the Government of Jordan, other local partners and water users to introduce direct water reuse in industry, agriculture and urban landscaping in Jordan, and to increase recycling of water by industries. Presently, there are three pilot reuse facilities in operation at Aqaba, Jerash and Wadi Musa, and plans to expand reclaimed water for landscape irrigation and industrial uses are in place.

### Municipal Water Conservation

The USAID-funded Water Efficiency and Public Information for Action project supports a nationwide social marketing program focused on practical ways to protect and conserve Jordan's scarce municipal water supply. It raises knowledge about water scarcity in Jordan, improves popular attitudes towards conservation and works towards a water demand management program.

The main components are development of water education programs for teachers, students in public and private schools, religious leaders and NGOs; media campaigns to reach the general public and businesses; increasing local NGO capacity; expanding the pool of professionals in the water and environment sectors; increasing the number of public and private buildings with water saving devices and rainwater harvesting facilities; and sustainable community understanding and participation in water activities. A demand management graduate course has also been developed in Jordan.

The project has achieved a number of behavior changes. A significant amount of water and financial resources have been saved, knowledge and acceptance of water conservation measures have increased, policy has been strengthened, advocacy and constituency for policy have developed, and capacity of government has increased.